surface 42 may be different than the amplitude of an AGC field at the outer diameter 54 of the disk surface 42 due to differences in bit density.

Furthermore, if a disk drive includes multiple disk surfaces 42, the calibration process shown in **Figure 5** should be performed for each disk surface 42 on a zone-by-zone basis. Furthermore, if more than one head 20 is used for a disk surface 42, the calibration process should also be performed for each head 20.

Figure 6 is a flow chart of the operation of the second main process of determining whether a high fly write condition exists for an embodiment of the present invention. Specifically, after the disk drive is turned on, the head 20 reads the average amplitudes of the AGC fields for all zones which were stored on the disk surface 42 in step 560 of **Figure 5** and the average amplitudes are then stored in memory (step 600).

At some point, a write command is received (step 610), which indicates a block of data in a data buffer (not shown) is to be written onto the disk surface 42. As is well-understood by those skilled in the art, prior to writing data onto the disk surface 42, one or more servo sectors 48 must be read by the head 20.

Specifically, head 20 reads the servo sector 48 immediately preceding the data sector 46 in which the block of data is to be stored. As part of reading the servo sector 48, the amplitude of the servo sector's AGC field 200 is measured (step 620). Furthermore, the measured amplitude of the AGC field 200 is compared to the average amplitude of the AGC fields 200 (now stored in memory) for the zone associated with the servo sector 48 (also in step 620). While (or slightly after) the comparison is being made, the block of data is then written onto the disk surface 42 (step 630).

If the difference between the measured amplitude of the AGC field and the average amplitude of the AGC fields for the zone is within a certain tolerance, a high fly write condition is presumed not to exist (step 640). Steps 610, 620 and 630 are repeated when the next block of data is to be written. It should be noted that the tolerance may be determined experimentally, by modelling or through use of the Wallace equation.

If the difference between the measured amplitude of the AGC field and the average amplitude of the AGC fields for the zone is outside of a certain tolerance, a high fly write condition may exist (step 640). Accordingly, a verification process is performed, whereby the written data is read from the disk surface 42 to make sure it was properly written (step 650). As will be appreciated by those skilled in the art, the verification process will require the disk to spin at least one revolution after the data has been written.

If no read errors exist, the data is presumed to have been written properly and the process returns to step 610 (step 660). However, if a read error exists, then a determination is made as to whether a high fly write flag has been set (step 670).

If the high fly write flag has not been set, a burnishing process is performed in an effort to dislodge any particles from the head 20 or to knock off any particles that may be on the disk surface 42 (step 680). Among other things, the burnishing process may include moving the head 20 back and forth between the inner diameter 52 and the outer diameter 54 while the head 20 contacts the disk surface 42 due to a slowing of the spindle motor 14. In addition, the high fly write flag is set (step 690).

After the burnishing process has been performed and the high fly write flag has been set, steps 620, 630 and 640 are repeated. If a high fly write condition continues to persist

(i.e., the difference between the measured amplitude of the AGC field and the average amplitude of the AGC fields for the zone is outside of a certain tolerance (step 640); and, after the verification process is performed (step 650), read errors continue (step 660)) and the high fly write flag has been set (step 670), then the block of data is pushed off (step 700). That is, the block of data is attempted to be written to either a different sector on the disk surface 42 or on an altogether different disk surface 42 using a different head 20.

Although not initially mentioned above, it should be noted that the high fly write flag may be cleared in step 610. Thus, for the embodiment shown in **Figure 6**, a block of data would not be pushed off until the burnishing process was attempted at least once.

It should be understood, however, that some of the steps in the flowchart of **Figure 6** may be eliminated or performed in a different order. Furthermore, instead of performing the verification process (step 650 and step 660) only once, the verification process may be repeated a predetermined number of times (e.g., five times). If no read errors are found during any one of the predetermined number of verifications, the process returns to step 610.

In one embodiment, instead of (or in addition to) performing the verification process, if the difference between the measured amplitude of the AGC field and the average amplitude of the AGC fields for the zone was outside of a certain tolerance, another attempt would be made to write the information onto the disk surface 42. That is, the disk would make one complete revolution and a measurement would again be taken of the amplitude of the AGC field to see if the difference between it and the average amplitude of the AGC fields for the zone was within a certain tolerance. This process could be performed a number of